

METHODS AND APPARATUS FOR DETERMINING A DIRECTION OF ARRIVAL IN  
A WIRELESS COMMUNICATION SYSTEM

ABSTRACT OF THE DISCLOSURE

5           Methods and apparatus are provided for determining a Direction of Arrival (DOA)  
of a remote unit (22) in a communication system (20). The apparatus includes a first  
antenna (32) and a second antenna (36) configured to receive an RF signal (32) having a  
plurality of scattered rays produced by multi-path scattering. A ray selector (114) of the  
apparatus is configured to identify a first ray and second ray from the scattered plurality of  
10 rays received at the first antenna (32) and the second antenna (36). A difference calculator  
(116) is configured to determine an amplitude difference (120) and a phase difference (122)  
between the first ray and said second ray, and an angle estimator (118) is configured to  
calculate a plurality of DOA values (142) based upon the phase difference (122) and select  
one of the plurality of DOA values (142) utilizing the amplitude difference (120).

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